AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-21. (cancelled)

22. (new) Magnetic conditioning device for diesel engine fuel, comprising:

a housing element (1) configured to be placed along a fuel feeding line, the housing element having a fuel inlet, and a fuel outlet, a top, and a bottom;

two opposed ferromagnetic material elements (5, 6) located within the housing element, a first of the two elements (5) being at the top of the housing and a second of the two elements (6) being at the bottom of the housing;

permanent magnets (4) mounted on and between the two opposed ferromagnetic material elements; and

a fuel duct defined inside the housing element from the fuel inlet to the fuel outlet, the fuel duct being between the top and the bottom of the housing and between the magnets,

the magnets inducing a magnetic field between the two opposed ferromagnetic material elements and within the fuel duct, and

the fuel duct turbulently deviating fuel entering the fuel inlet, through the magnetic field induced by the magnets, to the fuel outlet.

23. (new) Magnetic conditioning device for diesel engine fuel according to claim 22 wherein,

said two ferromagnetic opposed elements are rings, and

facing surfaces of said rings have opposite polarizations.

24. (new) Magnetic conditioning device for diesel engine fuel according to claim 22, wherein,

said two ferromagnetic opposed elements are rings,

a first set of magnets are mounted to the first of the two elements,

a second set of magnets are mounted to a second of the two elements,

the first set of magnets are aligned with the second set of magnets,

the first set of magnets are spaced apart from the second set of magnets,

the fuel duct is located between the first set of magnets and the second set of magnets, and

facing surfaces of the first and second set of magnets have opposite polarizations.

25. (new) Magnetic conditioning device for diesel engine fuel according to claim 22, wherein,

a first set of magnets are mounted to the first of the two elements,

a second set of magnets are mounted to a second of the two elements,

the first set of magnets are spaced apart from the second set of magnets and project toward the second set of magnets and into the fuel duct, and

the second set of magnets are spaced apart from the first set of magnets and project toward the first set of magnets into the fuel duct.

26. (new) Magnetic conditioning device for diesel engine fuel according to claim 22, wherein,

said fuel duct is defined by a wall located inside the housing element and extending along a centerline of the housing element to divide the fuel duct into two parts, with i) a first part located to a first side of the wall adjacent the fuel inlet and ii) a second part located to an opposite second side of the wall adjacent the fuel outlet.

27. (new) Magnetic conditioning device for diesel engine fuel, comprising:

a housing (1) with a fuel inlet and a fuel outlet;

two opposed ferromagnetic rings (5, 6) located with said housing;

a first set of permanent magnets (4) mounted on a first of said two rings;

a second set of permanent magnets (4) mounted on a second of said two rings,

said first and second sets of permanent magnets being spaced apart; and

a fuel duct defined inside the housing from the fuel inlet to the fuel outlet, and between said first and second sets of permanent magnets,

the magnets inducing a magnetic field, between the two opposed elements and along the fuel duct, to ionize fuel within the fuel duct, and

the fuel duct turbulently deviating fuel entering the fuel inlet, through the magnetic field induced by the magnets, to the fuel outlet.

28. (new) Magnetic conditioning device for diesel engine fuel according to claim 27, wherein,

said fuel duct is defined by a wall located inside the housing and extending along a centerline of the housing element to divide the fuel duct into two parts, with i) a first part located to a first side of the wall adjacent the fuel inlet and

ii) a second part located to an opposite second side of the wall adjacent the fuel outlet.